

Republic of Kenya

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Pickles (Draft Standard)

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KENYA STANDARD

KS 05-1097: 2012

ICS 67.080.20

Specification for pickles

PUBLIC REVIEW DRAFT

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TECHNICAL COMMITTEE REPRESENTATION

The following organization were represented on the technical committee:

Kenyatta University— Department of Nutrition & dietetics

Deepa Industries

Shree Sai Industries

Unilever Kenya

Kenya Polytechnic – Department of Food Beverage Production and Service

Kenya Polytechnic –Department of Food & Nutrition

Kenya Industrial Research and Development Institute

Kenya Consumers Organization

Kenya Bureau of Standards — Secretariat

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KENYA BUREAU OF STANDARDS (KEBS)

Head Office: P.O. Box 54974, Nairobi-00200, Tel.: (+254 020) 605490, 602350, Fax:
(+254 020) 604031
E-Mail: info@kebs.org, Web:<http://www.kebs.org>

Coast Region

P.O. Box 99376, Mombasa-80100
Box 2138, Nakuru-20100

Lake Region

P.O. Box 2949, Kisumu-40100

Rift Valley Region

P.O.

Tel.: (+254 041) 229563, 230939/40
(+254 051) 210553, 210555
Fax: (+254 041) 229448

Tel.: (+254 057) 23549, 22396
Fax: (+254 057) 21814

P R E F A C E

This Kenya Standard was prepared by the Technical Committee on Spices and Condiments under the supervision of the Standards Projects Committee and it is in accordance with the procedures of the Bureau.

The Standard prescribes the compositional and microbiological requirements for all types of pickles marketed in Kenya.

Pickles essentially contain the preservative ingredients, namely, acetic acid, oil, brine or citrus juice that are applied to prolong the shelf life of processed foods such as fruits, vegetables and fungi.

This standard will enhance the usage and application of pickles in food preservation and thus promote the health of consumers.

During the preparation of this standard, reference was made to the following publications:

The Food, Drugs and Chemical Substances Act, Cap. 254 of the Laws of Kenya.

Codex Stan 260- 2007 Codex Standard for Pickled Fruits and Vegetables

Codex Stan 115 e 1981- Codex Standard for Pickled Cucumbers (Cucumber Pickles)

Sri Lanka Standard 399: 1994, Specification for pickles.
Codex Stan 192 -

Acknowledgement is herby made for the assistance obtained from the above sources.

KENYA STANDARD
SPECIFICATION FOR PICKLES

1. SCOPE

This Kenya Standard prescribes the requirements and methods of test for pickles.

2 Normative references

EAS 217—Methods for the microbiological examination of foods.

EAS 41: 2000 - Part 1-16. –Methods of test for processed fruits and vegetables

EAS 38 ---Labelling of Prepackaged Foods.

EAS 39- Code of Hygienic Practice in the Food and Drink Manufacturing companies.

KS ISO 16050 -- Foodstuffs Determination of Aflatoxin B1 and total content of aflatoxin B1,B2,G1 and G2 in cereals ,nuts and derived products-HPLC Method.

KS ISO:4833—Methods for the microbiological examination of foods – Colony count Technique at 30 ° C. -- General Guidance.

KS ISO 4832: Methods for the microbiological examination of foods – Enumeration of coliforms - colony count technique at 30 ° C. -- General Guidance.

KS ISO: 6888-1- 3 Methods for the microbiological examination of foods – Enumeration of coagulase- positive staphylococci.

KS ISO 21527-1,2 Methods for the microbiological examination of foods—Enumeration of yeasts and moulds in food.

KS ISO 6579: - Methods for the microbiological examination of foods—Examination for salmonellae.

KS ISO : 16654—Microbiology of food and animal feeding stuffs- horizontal method for the detection of Escherichia coli O157.

KS 05-702*. Specification for vinegar

KS 05-229[†]. Specification for edible salt (*First Revision*).

KS 05-326.—Edible vegetable oil –Specification

KS ISO 948 Spices and condiments Sampling

3. DEFINITION

For the purposes of this standard the following definition shall apply:

3.1 Pickles shall be the fruits, vegetables or fungi preserved in common salt, vinegar, oil or citrus juices.

* Specification for vinegar.

[†] Specification for edible salt (*First Revision*).

4. TYPES

4.1 Pickles shall be of the following three types:

Type 1 — Pickles in vinegar.

Type 2 — Pickles in citrus juice or brine.

Type 3 — Pickles in oil.

5. REQUIREMENTS

5.1 **General** — Pickles shall be prepared from fresh or cured, clean and sound fruits, vegetables or fungi. The material used shall be free from insect or fungal attack. Apart from the covering media and those ingredients permitted in 4.2, the optional substances that may be added to pickles are spices, onions, ginger, garlic salt and sugar.

5.2 **Food Additives** — No additives other than those permitted under the Food, Drugs and Chemical Substances Act, Cap. 254 of the Laws of Kenya,
Codex Stan 115 – CODEX Standard for Pickled Cucumbers (cucumber pickles)
Codex Stan 260- 2007 Codex Standard for Pickled Fruits and Vegetables

Codex Stan 192 – Codex General Standard for Food additives shall be used.

5.3 **Covering Media** — The covering media of the three types of pickles shall be as follows:

5.3.1 Type 1 — Vinegar conforming to KS 05-702^{*}.

5.3.2 Type 2 — Freshly prepared citrus fruit juice conforming to the relevant Kenya standards or brine prepared from common salt conforming to KS 05-229[†].

5.3.3 Type 3 — Edible vegetable oil conforming to KS 05-326.

5.4 Requirements for the Finished Product

5.4.1 **Appearance** — Pickles shall be free from any discolouration or blackening visible signs of fungal growth or frothing due to microbial growth. The product shall not contain any dirt, grit or any other foreign matter.

* Specification for vinegar.

† Specification for edible salt (*First Revision*).

- 5.4.2** *Flavour* — Pickles shall possess a pleasant aroma and flavour characteristic of the product. The product shall be free from any objectionable flavour or off-taste, smell or odour.
- 5.4.3** *Texture* — The fruits, vegetables or fungi, after processing shall possess a good texture, shall not be unduly hard or tough and shall be free from development of softening.
- 5.4.4** Pickles shall conform to the compositional requirements indicated in Table 1.

TABLE 1. COMPOSITIONAL REQUIREMENTS FOR PICKLES

SL No.	CHARACTERISTIC	TYPE OF PICKLE			TEST METHOD
		Type 1	Type 2	Type 3	
(i)	Fluid portion, per cent by mass of the net mass, max.	30	30	30	Appendix A
(ii)	Acidity as acetic acid of fluid portion, per cent by mass, max.	30	—	—	EAS 41: 2000* part 1-16.
(iii)	Acidity (for pickles in citrus fruit juice as anhydrous citric acid, per cent by mass, min.)	—	1.2	—	EAS 41: 2000* part 1-16.
(iv)	Sodium chloride (for pickles in brine), per cent by mass, max.	—	10	—	Appendix B

* Methods of test for processed fruits and vegetables.

- 5.4.5** Pickles shall conform to the trace metals tolerance limits given in Table 2.

TABLE 2. TOLERANCE LIMITS FOR TRACE METALS IN PICKLES

SL No.	TRACE ELEMENT, ppm, max.	LIMIT	TEST METHOD
(i)	Arsenic	0.01	EAS 41: 2000 part 1-16.
(ii)	Lead	0.1	"
(iii)	Tin	250	"
(iv)	Iron	7	"

*Methods of test for processed fruits and vegetables.

5.4.6 Hygiene —Pickles shall be manufactured in accordance with the hygiene regulations stipulated in the Public Health Act, Cap. 242 of the Laws of Kenya, EAS 39:2000- Hygiene in the food and drink manufacturing companies — Code of practice.

[In addition to these the product shall be handled in accordance with CAC / RCP 1-1969 ,Codes recommended by codex Alimentarius commission which are relevant to this product.]

6. Pickles shall conform to the microbiological limits indicated in Table 3.

TABLE 3. MICROBIOLOGICAL LIMITS FOR PICKLES

SL No.	CHARACTERISTIC	LIMIT	TEST METHOD
(i)	Coliforms	< 10	KS ISO 4832
(ii)	Yeasts and mould counts, cfu / g	< 10	KS ISO KS ISO 4832"
(iii)	<i>E. Coli</i> counts, cfu / g	absent	KS ISO 16654
(iv)	<i>Salmonella spp</i> , cfu / 25g	absent	KSISO 6579"
V)	<i>Staphylococcus aureus</i> cfu/g	< 10	KS ISO 6888"

EAS 217-1-1:2008—Methods for the microbiological examination of foods

7. PACKAGING AND LABELLING

- 7.1 Packaging** — Pickles shall be packaged in food grade containers that secure integrity and safety of the product..
- 7.2 Labelling** —Labelling of pickles shall be done in accordance with the requirements of EAS 38:2000, *Labelling of pre-packaged foods — Specification** and shall include the following:
- (i) Name of the product;
 - (ii) Name, physical location and address of the manufacturer;
 - (iii) Net mass of contents in grams;
 - (iv) Date of manufacture;
 - (v) Expiry date;
 - (vi) Lot / batch Number
 - (vii) Country of Origin.
 - (viii) Irradiation status;
 - (ix) GMO status
 - (x) Storage instructions
 - (xi) Instructions for use.

8.Sampling

Sampling shall be done according to KS ISO 948 Spices and condiments Sampling

9. METHODS OF TEST

Testing of pickles shall be done in accordance with the procedures stipulated in the relevant Kenya standards and Appendices A and B of this standard.

KS ISO 4832: 2006 - Microbiology of food and animal feeding stuffs -- Horizontal method for the enumeration of coliforms -- Colony-count technique.

1. ***KS ISO 6888 (all parts): Microbiology of food and animal feeding stuffs -- Horizontal method for the enumeration of coagulase-positive staphylococci (*Staphylococcus aureus* and other species)***
2. ***KS ISO 6579 - Microbiology of food and animal feeding stuffs — Horizontal method for the detection of *Salmonella* spp.***

* Labelling of prepackaged foods (*First Revision*).

3. *KS ISO 11866 (All parts) - Specification for milk and milk products - Enumeration of presumptive Escherichia coli.*

APPENDIX A

DETERMINATION OF FLUID PORTION

A1. APPARATUS

- A1.1 **1.70 mm Steve (Aperture 1.7 mm)** — Alternatively, sieve 10 of ASTM sieve 12 or Tyler sieve 10 may be used as they are equivalent to 1.70 mm sieve.

A2. PROCEDURE

Carefully weigh the clean and dry sieve. Empty the contents of the container onto the sieve in such a manner as to distribute the product evenly. Incline the sieve for 2 min. so as to facilitate drainage without disturbing the product.

A3. CALCULATION

$$\text{Percentage fluid portion} = \frac{(w_3 - w_1 - w_2)}{w_3} \times 100$$

where,

w_1 = weight of the product and sieve;

w_2 = weight of sieve; and

w_2 = net weight of the product in the container.

APPENDIX B

DETERMINATION OF SODIUM CHLORIDE IN BRINE

B1. GENERAL

Either of the two methods, namely, Method 1 (see Clause **B2**) and Method 2 (see Clause **B3**) may be used. Method 1 shall be the reference method in case of dispute.

B2. METHOD 1

B2.1 Apparatus

B2.1.1 *Graduated Flask* — Of 100 mL capacity.

B2.1.2 *Erlenmeyer Flask* — Of 300 mL capacity.

B2.2 REAGENTS

B2.2.1 *Ethyl Alcohol*

B2.2.2 *Concentrated Nitric Acid*

B2.2.3 *Standard Silver Nitrate Solution* — 0.1M.

B2.2.4 *Ferric Alum Indicator Solution* — A saturated solution of ferric ammonium sulphate ($\text{FeNH}_4(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$).

B2.2.5 *Standard Ammonium Thiocyanate Solution* — 0.1M

B2.3 Procedure — Weigh exactly 5.0 g of the brine and transfer to a 100 mL graduated flask with 50 mL of 80 per cent alcohol. Shake well to suspend all insoluble material. Add 1 mL of concentrated nitric acid, and, with a pipette, an excess of known volume of a 0.1 M silver nitrate solution. Dilute to 100 mL with alcohol. Then transfer the mixture to the centrifuge bottle and centrifuge for five minutes at approximately 1 800 rev/min.

Pipette 50 mL of the supernatant liquid into a 300 mL Erlenmeyer flask and to it, add 2 mL of concentrated nitric acid and 2 mL of ferric alum indicator solution. Titrate with the standard ammonium thiocyanate solution to a permanent light brown colour.

B2.4 Calculation — Sodium chloride, in the brine, per cent by mass

$$= \frac{11.6(v_1m_1 - v_2m_2)}{w}$$

where,

- v_1 = volume in millilitres of the standard silver nitrate solution;
- m_1 = molarity of the standard silver nitrate solution;
- v_2 = volume in millilitres of the standard ammonium thiocyanate solution, used;
- m_2 = molarity of the standard ammonium thiocyanate used; and
- w = mass in grams of the brine in the aliquot.

B3. METHOD 2

B3.1 Reagents

B3.1.1 Standard Sodium Hydroxide Solution — 0.1M.

B3.1.2 Standard Silver Nitrate Solution — 0.1.

B3.1.3 Phenolphthalein Indicator Solution — Prepared by dissolving 0.1 g of phenolphthalein in 100 mL of 60 per cent rectified spirit.

B3.1.4 Potassium Chromate Indicator Solution — Approximately 5 per cent (M/V).

B3.2 Procedure — Take a suitable aliquot of the solution prepared as in **B2.3**. If it is acidic, neutralize it with the standard sodium hydroxide solution using phenolphthalein as an indicator.

Then titrate with the standard silver nitrate solution using potassium chromate solution as an indicator.

B3.3 Calculation — Sodium chloride, in the brine, per cent by mass

$$= 5.8 \frac{(V M)}{W}$$

where,

V = volume in millilitres of the standard silver nitrate solution used;

M = molarity of the standard solution; and

W = mass in grams of the brine in the aliquot.